

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

1. Name of Property

Historic name: N/A

Other name/site number: Battle Creek King Post Truss Bridge (preferred); 74-LT-11; 000740591903080

2. Location On West Eagle Road (aka Commercial Street), 3.0 miles east of the intersection with Washington Road (aka 531 Road); 0.25 miles south and 3.0 miles east of the town of Long Island.

city or town Long Island not for publication
X vicinity

state code KS county Phillips county code 147 zip code 67647

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this XX nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property XX meets does not meet the National Register criteria. I recommend that this property be considered significant nationally XX statewide locally. (See continuation sheet for additional comments.)

Richard D. Parkin
Signature of certifying official

4-09-03
Date

KANSAS STATE HISTORICAL SOCIETY

State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria.
(See continuation sheet for additional comments.)

Signature of commenting or other official

Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby, certify that this property is:

- entered in the National Register.
See continuation sheet
determined eligible for the National Register.
See continuation sheet
determined not eligible for the National Register.
removed from the National Register.
other, (explain:)

Signature of Keeper

Date of Action

Property Name Battle Creek King Post Truss BridgeCounty and State Phillips, KansasPage 2**5. Classification**

Ownership of Property

☐ private
☒ public-local
☐ public-State
☐ public-Federal

Category of Property

☐ building(s)
☐ district
☐ site
☒ structure
☐ object

No. of Resources within Property

contributing	noncontributing
<u> </u>	<u> </u> buildings
<u> </u>	<u> </u> sites
<u> 1 </u>	<u> </u> structures
<u> </u>	<u> </u> objects
<u> 1 </u>	<u> 0 </u> Total

Name of related multiple property listing:
(Enter "N/A" if property is not part of a
multiple property listing.):

Metal Truss Bridges in Kansas

No. of contributing resources previously
listed in the National Register

0**6. Functions or Use**

Historic Functions

(Enter categories from instructions.)

TRANSPORTATION: Road-related (vehicular)

Current Functions

(Enter categories from instructions.)

TRANSPORTATION: Road-related (vehicular)**7. Description**

Architectural Classification

(Enter categories from instructions.)

OTHER: King Post Truss

Materials

(Enter categories from instructions.)

Foundation ConcreteWalls Roof Other Metal: Iron, Steel

Narrative Description (Describe the historic and current condition of the property on one or more
continuation sheets.)

Property Name Battle Creek King Post Truss BridgeCounty and State Phillips, KansasPage 3**8. Statement of Significance**

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

☐ A Property is associated with events that have made a significant contribution to the broad patterns of our history.☐ B Property is associated with the lives of persons significant in our past.☒ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.☐ D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations (Mark "x" in all the boxes that apply.)

☐ A owned by a religious institution or used for religious purposes.☐ B removed from its original location.☐ C a birthplace or a grave.☐ D a cemetery.☐ E a reconstructed building, object, or structure.☐ F a commemorative property.☐ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

Enter categories from instructions.)

ENGINEERINGTRANSPORTATION

Period of Significance

1910

Significant Dates

1910

Cultural Affiliation

N/A

Significant Person

N/A

Architect/Builder

Canton Bridge Company (Canton, Ohio)

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

Property Name Battle Creek King Post Truss BridgeCounty and State Phillips, KansasPage 4**9. Major Bibliographical References**

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing
(36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings
Survey # _____
- ☐ recorded by Historic American Engineering

Primary location of additional data:

- ☒ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☒ Local government
- ☐ University
- ☐ Other

Specify repository:

Record # _____

10. Geographical DataAcreage of property .1 acre

UTM References

1 1/4 4/5/9/0/6/0 4/4/2/1/4/5/0/
Zone Easting Northing3 / / / / / / / / / / /
Zone Easting Northing2 / / / / / / / / / / /4 / / / / / / / / / / /See continuation sheet

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared Byname/title Kerry Davis, Architectural Historian & Elizabeth Rosin, Partnerorganization Historic Preservation Services date August 5, 2002street & number 323 West Eighth Street, Suite 112 telephone (816) 221-5133city or town Kansas City state Missouri zip code 64105**Additional Documentation**

Submit the following items with the completed form:

Continuation Sheets

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location.

A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black-and-white photographs of the property.

Additional items (Check with the SHPO or FPO for any additional items.)

Property Owners (Complete this item at the request of the SHPO or FPO.)Name County of Phillipsstreet & number 301 State Street telephone 785-543-6825city or town Phillipsburg state KS zip code 67661

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**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section Number 7 Page 1

Battle Creek King Post Truss Bridge
Phillips County, Kansas

DESCRIPTION

LOCATION AND SETTING

The Battle Creek King Post Truss Bridge is located 0.25 miles south and 3.0 miles east of the town of Long Island in north central Kansas, on the east-west section line between the SE ¼ of Section 20 and the NE ¼ of Section 29, Township 1S, Range 19W. The region is defined by rolling prairie hills with deep, tree-lined creek valleys. The Battle Creek King Post Truss Bridge carries West Eagle Road (also known as Commercial Street) across Battle Creek, a meandering, intermittent branch of Prairie Dog Creek. The dirt roadway, flanked by fenced pasture, aligns directly with the Battle Creek King Post Truss Bridge.

TRUSS TYPE

The Battle Creek King Post Truss Bridge is a single span, riveted pony truss¹ that measures 38 feet in length and 16 feet in width.² Historic, standard, box-form concrete abutments support the end floor beams of the truss, which rest directly on the abutment seat. The side walls of the abutments extend approximately 15 feet along the approach grade.

The inclined end posts rise from the bottom chords to meet at the center of the bridge, forming the triangular shape characteristic of this truss design. The central, vertical King Post rises approximately 4½ feet from the bottom chord to complete the truss. The inclined end posts consist of two channels with a cover plate and lacing bars; the bottom chords consist of angle stock with stay plates. Angle stock and lacing bars compose the King Posts.

The timber deck is 16 feet wide and rises approximately 10½ feet above the creek bed on steel I-beam stringers. A single, central floor beam spanning the width of the bridge between the bases of the King Posts connects to the end floor beams via lower lateral bracing rods.

Two of the original four sections of riveted lattice guardrail are intact. A third is present, but damaged and detached. The fourth section is missing. A small square plaque located on the top of the northeast inclined post reads "THE CANTON / BRIDGE CO. / CANTON, OHIO." Letters in relief read "Jones & Laughlins" on several structural members.

INTEGRITY

The Battle Creek King Post Truss Bridge is an excellent example of this bridge type, increasingly rare in Kansas.³ Although vehicular impact has damaged a section of the historic guardrail, this is repairable and the loss of the fourth section does not significantly impact the overall integrity of the bridge. The Battle Creek King Post Truss Bridge retains a good degree of integrity, with no significant alterations to the original design or materials. The original workmanship, setting, and feeling of the structure are also readily apparent. Furthermore, the potential for preservation of the bridge is high. Located on a lightly traveled road, it is unlikely that traffic requirements will necessitate alteration or replacement.

¹ A pony truss is also referred to as a low truss.

² The length equals the distance between abutments; the width equals deck width.

³ Dale Nimz, *Activity III Review Initial Assessment Metal Truss Bridges*. (Topeka: Kansas State Historical Society, 1998), 6. Nimz indicates only approximately 12 surviving in Kansas.

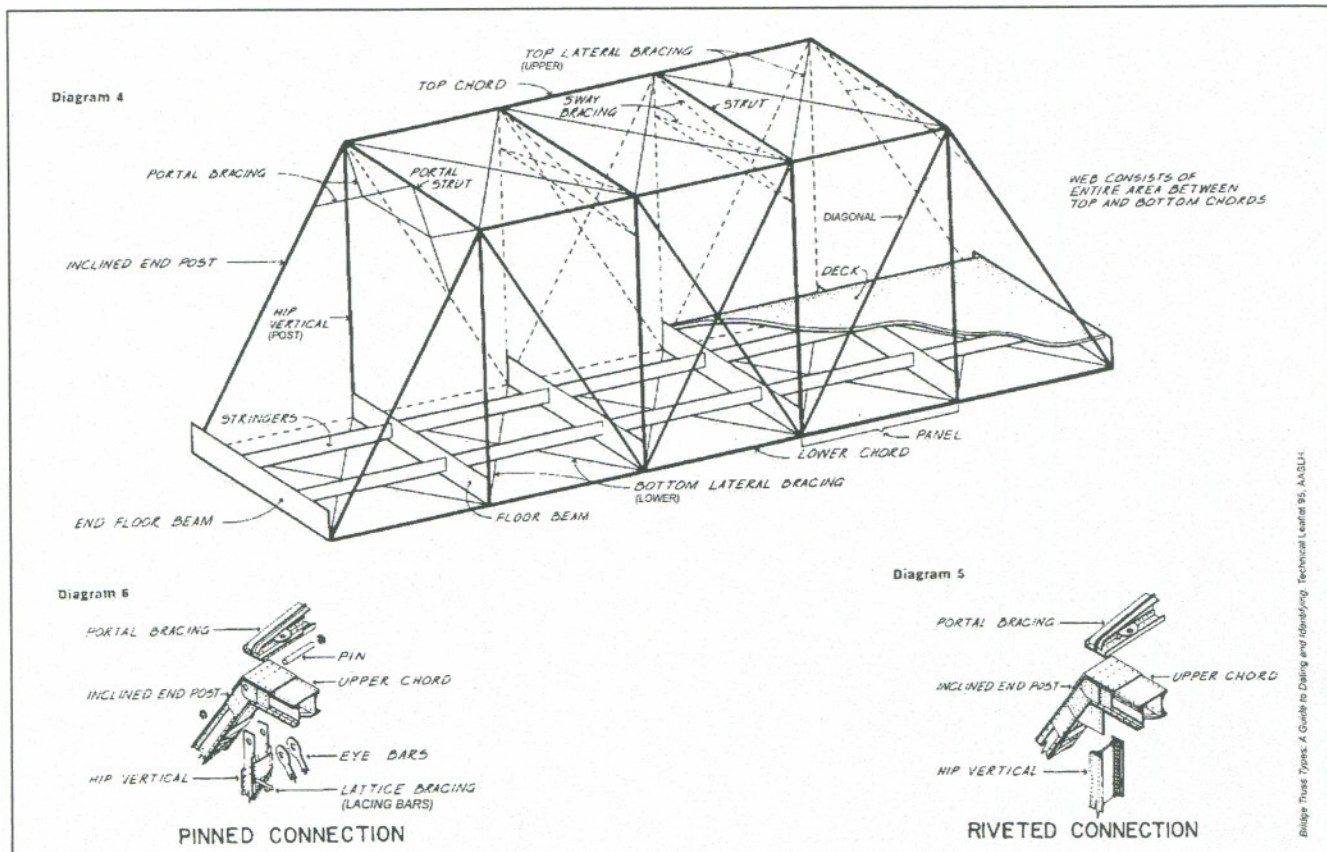
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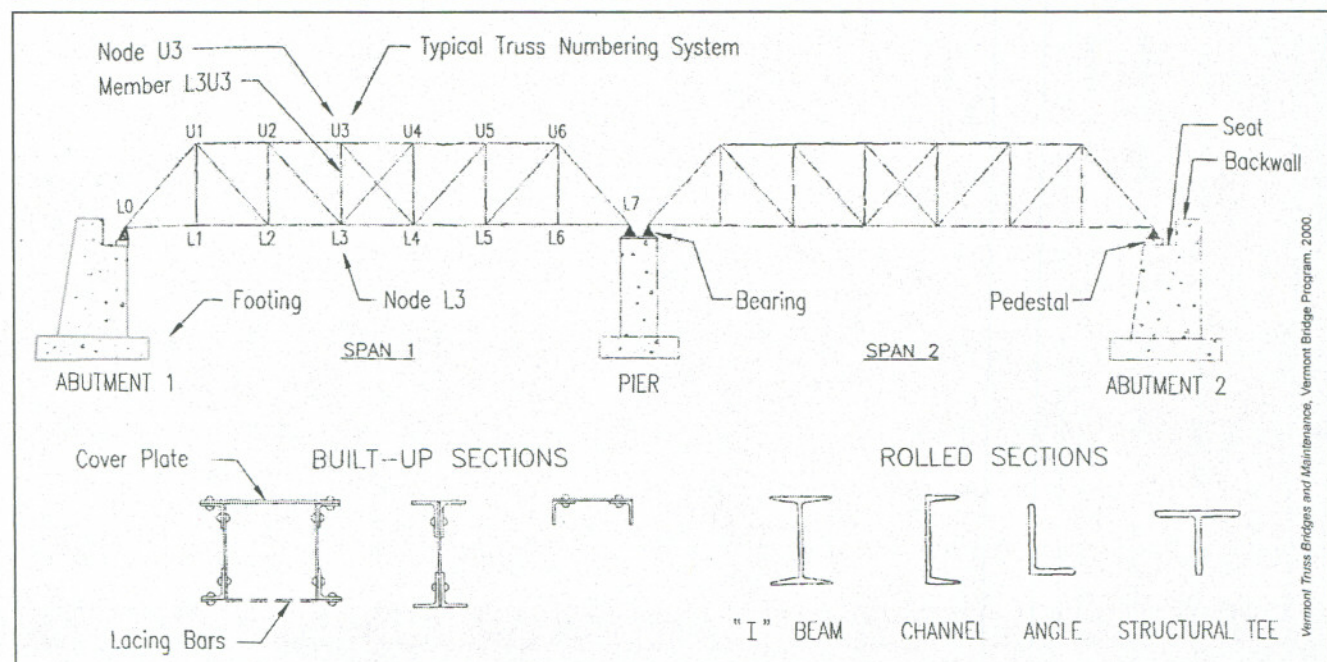
Battle Creek King Post Truss Bridge
Phillips County, Kansas

TRUSS TERMINOLOGY



Bridge Truss Types: A Guide to Dating and Identifying Technical Leaflet 95, ASBLA

Vermont Truss Bridges and Maintenance, Vermont Bridge Program, 2000



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Battle Creek King Post Truss Bridge
Phillips County, Kansas

STATEMENT OF SIGNIFICANCE

The Battle Creek King Post Truss Bridge is significant under National Register Criterion C in the areas of Engineering and Transportation. As defined by the *Multiple Property Documentation Form for Metal Truss Bridges in Kansas*, it is an excellent example of the King Post truss bridge type. Built in 1910,¹ the Battle Creek King Post Truss Bridge is an example of a common, economical bridge solution for a relatively short span. Its riveted construction and concrete abutments illustrate the standardization of these construction techniques and materials during the period of significance. As no historic name identifies this bridge, the preferred name "Battle Creek King Post Truss Bridge" has been assigned. This describes and identifies the location, design, and function of the structure.

ELABORATION

The need for all-weather crossings of rivers and streams corresponded to the growth of the market economy across Kansas during the late nineteenth and early twentieth centuries. Bridges provided farmers easy access to markets and could make the difference between growth and stagnation for the many small, young communities across the state.² Proximity to a bridge often secured a town's economic stability, and it contributed to a local sense of modernity.

Prior to the 1930s, the railroad was the primary means of long-distance travel and there was little need for roads to extend more than a few dozen miles. With little stimulus for improving roads that would cross multiple jurisdictions, road construction and maintenance remained local concerns. County commissioners often carried the burden of selecting bridge locations, over which much contention was common.

The range of choices for bridge designs and companies was vast. Many of the larger bridge companies sold metal truss bridges through mail order catalogues. County commissioners could simply specify the span, clearance needs, and truss type (if there was a preference), then choose the lowest bidder from the numerous competing companies that had salesmen in the field.

By the late nineteenth century, fabrication of iron and steel was widespread. The speed of construction and the relatively low cost of metal truss bridge parts ensured their popularity over labor-intensive masonry bridges and short-lived timber bridges. Toward the end of the nineteenth century the quality, quantity, and cost of steel improved to such a degree that it virtually replaced wrought iron for bridge construction by 1910.³

Most metal trusses were constructed of built-up members composed of mass-produced, standard-shaped channel, plate, and angle stock purchased from one or more of the numerous steel companies nationwide. The bridge companies preassembled trusses in their factories then simply shipped them to the bridge site for installation. Installation involved grading approaches, constructing abutments and piers, erecting preassembled floor and truss members, and placing deck material.

¹ Phillips County Road Department records, Phillipsburg, Kansas.

² Larry Jochims, *Metal Truss Bridges in Kansas 1861-1939, National Register of Historic Places Multiple Property Documentation Form*, (Topeka: Kansas State Historical Society, 1989), E.

³ Ibid, F.

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Battle Creek King Post Truss Bridge
Phillips County, Kansas

Before 1900, generally all panel point connections – the locations at which structural bridge elements intersect – were made with the use of a pin. This technique was so widespread that it became one of the distinctive features of American bridge construction in the nineteenth century.⁴ However, subsequent advancements in pneumatic riveting techniques greatly improved rivet installation quality, enabling more reliable panel point connections. With the increased portability of this construction technology, the more rigid, riveted technique rapidly surpassed pin-connected bridge construction during the first years of the twentieth century. The riveted construction of the Battle Creek King Post Truss Bridge illustrates the standardization of this technique.

In addition, the contemporary development of economic cement production promoted the widespread combination of steel and concrete in bridge construction. It was not uncommon for older metal truss bridges to receive new reinforced concrete decks or poured concrete reinforcements for older stone abutments. By the 1920s, reinforced concrete was the standard material for abutments, piers, and decks of steel truss bridges. The poured concrete abutments and deck of the Battle Creek King Post Truss Bridge are typical of bridges built during this period.

The Battle Creek King Post Truss Bridge is a classic example of this truss design. The simple, sturdy design of the King Post truss can be traced back to medieval times. It consists of inclined end posts placed in compression with center King posts acting under tension, resulting in a visually distinctive triangular shape. This design was most successful for relatively short spans because the height of the central post must increase in relation to the length of the bottom chord. This simple triangular arrangement of forces spawned most subsequent bridge designs.⁵

In Kansas, King Post truss bridges were constructed into the early part of the twentieth century, indicating the appeal of its simplicity and economical construction costs.⁶ In 1998, only twelve King Post truss bridges, including the Battle Creek King Post Truss Bridge, existed throughout the state of Kansas.⁷

STRUCTURE HISTORY

First settled in 1871 as a trading and shipping point for cattlemen and farmers, the nearby town of Long Island was named for its position between two creeks (Prairie Dog Creek and Elk Creek) that run parallel for several miles.⁸ Settlers were attracted to the ample water supplied by these streams, and the population of Long Island Township grew to 533 residents in 1880, making it the eighth most populous of 23 townships in Phillips County. This settlement supported commercial development in the town of Long Island, which featured a post office, a hotel, a store, a blacksmith shop, and a gristmill. By 1888, the Burlington & Missouri River Railroad established a station in town to serve a branch line, and Long Island was soon a thriving rural town. Typical of small towns throughout Kansas, it served as a trading and shipping point for the surrounding rural community. As a result,

⁴ Ibid, F.

⁵ Ibid, E.

⁶ Ibid.

⁷ Nimz, 6.

⁸ *WPA Guide to 1930s Kansas*. (Lawrence: University of Kansas Press, 1984), 445.

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Battle Creek King Post Truss Bridge
Phillips County, Kansas

fords and bridges that provided area farmers with access to local markets were critical to the survival of the regional economy. Underscoring the significance of these crossings, a twin King Post truss bridge, the Jack Creek Kingpost⁹ is located less than 2½ miles east of the Battle Creek King Post Truss Bridge.

The Canton Bridge Company of Canton, Ohio built the Battle Creek King Post Truss Bridge in 1910.¹⁰ Markings on the structural members indicate that the Canton Bridge Company purchased the stock metal from Jones & Laughlins Steel Corporation of Pittsburgh, Pennsylvania. A prolific out-of-state bridge builder in Kansas, the Canton Bridge Company heavily marketed short span truss bridges, including the King Post design, in this region at the turn of the century.¹¹ No further construction history has presently been located.¹²

The Canton Bridge Company of Canton, Ohio advertised in *Engineering Record* as early as 1876 and was incorporated in 1891.¹³ The executives in 1891 included W. E. Sherlock, President; V. H. Hammond, Vice President; and C. E. Timkler, Chief Engineer.¹⁴ Massillion Steel Joist Company of Massillion, Ohio purchased the company in 1925 and the two companies were merged into Macomber Steel Company in 1927.

⁹ This bridge is listed in the National Register of Historic Places, 1989.

¹⁰ An identification plaque affixed to the bridge states the bridge company; Phillips County Road Department records state the construction date.

¹¹ Larry Jochims, *West Sappa Creek Lattice Bridge, National Register of Historic Places Registration Form*, (Topeka: Kansas State Historical Society, 1989)

¹² Inquiry into the Norton County Road and Bridge records, Kansas Department of Transportation records, Kansas State Historical Society archives, Phillips County Historical Society archives, and *Western Contractor* revealed no further construction history specific to the Battle Creek King Post Truss Bridge.

¹³ Jochims, *West Sappa Creek Lattice Bridge*.

¹⁴ *Ibid.* It is likely that V. H. Hammond is a relation of D. Hammond of Wrought Iron Bridge Company in Canton, Ohio.

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Battle Creek King Post Truss Bridge
Phillips County, Kansas

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Battle Creek King Post Truss Bridge
Phillips County, Kansas

GEOGRAPHICAL DATA

Verbal Boundary Description:

Located on the east-west section line between the SE $\frac{1}{4}$ of Section 20 and the NE $\frac{1}{4}$ of Section 29, Township 1S, Range 19W, the Battle Creek King Post Truss Bridge encompasses an area measuring approximately 38 feet by 16 feet. The northwest corner of this area corresponds to the northwest corner of the bridge.

Boundary Justification:

The boundary includes the truss, deck, abutments, and associated approaches that represent the significant features associated with the bridge structure.

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Section - Photographic Documentation Page 8

Battle Creek King Post Truss Bridge
Phillips County, Kansas

PHOTO LOG

Photographer: Kerry Davis
Date of Photographs: February 2002
Location of Original Negative: Kansas State Historical Society, Topeka, Kansas

Photograph Number	Camera View
1.	View NE, bridge truss and abutments
2.	View E, along roadway
3.	View SW, bridge truss and abutments
4.	View NW, bridge truss and abutments
5.	View NE, truss understructure
6.	View W, plaque detail

